Complete Summary

GUIDELINE TITLE

2002 guidelines for the management of pelvic infection and perihepatitis.

BIBLIOGRAPHIC SOURCE(S)

Association for Genitourinary Medicine (AGUM), Medical Society for the Study of Venereal Disease (MSSVD). 2002 national guidelines for the management of pelvic infection and perihepatitis. London: Association for Genitourinary Medicine (AGUM), Medical Society for the Study of Venereal Disease (MSSVD); 2002. Various p. [19 references]

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SCOPE

DISEASE/CONDITION(S)

Pelvic infection and perihepatitis

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Infectious Diseases
Obstetrics and Gynecology
Urology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To present a national guideline on the management of pelvic infection and perihepatitis

TARGET POPULATION

Patients in the United Kingdom with pelvic infection and perihepatitis

INTERVENTIONS AND PRACTICES CONSIDERED

Assessment/Diagnosis

1. Assessment of clinical features
2. Diagnostic procedures
    - Testing for gonorrhea and chlamydia
    - Erythrocyte sedimentation rate or C reactive protein
    - Laparoscopy
    - Endometrial biopsy and ultrasound scanning
3. Differential diagnosis of lower abdominal pain

Management/Treatment

1. Criteria for selecting a treatment regimen
2. General advice (e.g., rest, appropriate analgesia, pregnancy test) and patient education
3. Pharmacological intervention
    - Broad spectrum antibiotic therapy to cover Neisseria gonorrhoeae, Chlamydia trachomatis, and anaerobic infection

    Recommended regimens:

    - Intravenous cefoxitin plus intravenous doxycycline followed by oral doxycycline plus oral metronidazole
    - Intravenous clindamycin plus intravenous gentamicin followed by either oral clindamycin or oral doxycycline plus oral metronidazole
    - Oral ofloxacin plus oral metronidazole
    - Intramuscular ceftriaxone or intramuscular cefoxitin with oral probenecid followed by oral doxycycline plus metronidazole

    Alternative regimens:

    - Intravenous ofloxacin plus intravenous metronidazole
    - Intravenous ciprofloxacin plus intravenous (or oral) doxycycline plus intravenous metronidazole
4. Sexual partner notification, evaluation, and treatment
5. Follow-up

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of diagnostic instruments
- Long-term sequelae of pelvic inflammatory disease, such as ectopic pregnancy, infertility, and pelvic pain
- Clinical response to treatment

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Five reference sources were used as the basis for the guidelines.

1. Medline (U.S. National Library of Medicine) search.

   Medline was searched for the years 1987 to April 2000. The search strategy comprised the following terms in the title or abstract: "pelvic inflammatory disease", "adnexitis", "oophoritis", "parametritis", "salpingitis", or "adnexal disease". 2,610 citations were identified. Medline was searched for the years 1963-1986. The search strategy comprised the following terms in the title or abstract: "pelvic inflammatory disease", "adnexitis", "oophoritis", "parametritis", "salpingitis", or "adnexal disease". The dataset was then limited to AIM journals and human subjects, identifying 349 citations.

2. 1998 U.S. Centers for Disease Control and Prevention (CDC) guidelines (1998 guidelines for treatment of sexually transmitted diseases. Centers for Disease Control and Prevention. MMWR Recomm Rep. 1998 Jan 23;47[RR-1]:1-111).
3. 1997 Netherlands Sexually Transmitted Disease (STD) Management Guidelines (Netherlands Association for Dermatology and Venereology. 1997 STD Diagnosis and Therapy Guidelines. 1997).
4. Royal College of Obstetrics and Gynaecology (RCOG) Working Group on pelvic inflammatory disease -- report, 1996. (Recommendations arising from the 31st Study Group: The Prevention of Pelvic Infection. In: Templeton A, editor. The Prevention of Pelvic Infection. London: RCOG Press, 1996:267-270.)
5. Cochrane Collaboration.
   a. Cochrane database of systematic reviews. No directly relevant reviews were identified.
   b. Cochrane controlled trials register. Using a search strategy of "pelvic inflammatory disease", "adnexitis", "oophoritis", "parametritis", "salpingitis", or "adnexal disease", 312 citations were identified.

NUMBER OF SOURCE DOCUMENTS

- Medline searches 1987 to April 2000 yielded 2610 citations
- Medline searches 1963 to 1986 yielded 349 citations
- Cochrane searches yielded 312 citations

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence:

Ia

- Evidence obtained from meta-analysis of randomised controlled trials

Ib

- Evidence obtained from at least one randomised controlled trial

IIa

- Evidence obtained from at least one well designed controlled study without randomisation

IIb

- Evidence obtained from at least one other type of well designed quasi-experimental study

III

- Evidence obtained from well designed non-experimental descriptive studies such as comparative studies, correlation studies, and case control studies

IV

- Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The revision process commenced with authors being invited to modify and update their 1999 guidelines. These revised versions were posted on the website for a 3 month period and comments invited. The Clinical Effectiveness Group and the authors concerned considered all suggestions and agreed on any modifications to be made.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grading of Recommendations:

A (Evidence Levels Ia, Ib)

- Requires at least one randomised controlled trial as part of the body of literature of overall good quality and consistency addressing the specific recommendation.

B (Evidence Levels IIa, IIb, III)

- Requires availability of well conducted clinical studies but no randomised clinical trials on the topic of recommendation.

C (Evidence Level IV)

- Requires evidence from expert committee reports or opinions and/or clinical experience of respected authorities.
- Indicates absence of directly applicable studies of good quality.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The initial versions of the guidelines were sent for review to the following:

- Clinical Effectiveness Group (CEG) members
- Chairs of UK Regional GU Medicine Audit Committees who had responded to an invitation to comment on them
- Chair of the Genitourinary Nurses Association (GUNA)
- President of the Society of Health Advisers in Sexually Transmitted Diseases (SHASTD)

- Clinical Effectiveness Committee of the Faculty of Family Planning and Reproductive Health Care (FFP).

Comments were relayed to the authors and attempts made to reach a consensus on points of contention with ultimate editorial control resting with the Clinical Effectiveness Group. Finally, all the guidelines were ratified by the councils of the two parent societies.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions of the levels of evidence (I-IV) and grades of recommendation (A-C) are repeated at the end of the "Major Recommendations" field.

Diagnosis

- Pelvic inflammatory disease may be symptomatic or asymptomatic. Even when present, clinical symptoms and signs lack sensitivity and specificity (the positive predictive value of a clinical diagnosis is 65-90% compared with laparoscopic diagnosis) (Bevan et al., 1995; Centers for Disease Control (CDC), 1998; Morcos et al., 1993).
- Testing for gonorrhoea and chlamydia in the lower genital tract is recommended since a positive result supports the diagnosis of pelvic inflammatory disease. The absence of infection at this site does not exclude pelvic inflammatory disease however (Bevan et al., 1995; CDC, 1998; Morcos et al., 1993; Netherlands Association for Dermatology and Venereology, 1997).
- An elevated erythrocyte sedimentation rate or C reactive protein also supports the diagnosis (Miettinen et al., 1993).
- Laparoscopy may strongly support a diagnosis of pelvic inflammatory disease but is not justified routinely on the basis of cost and the potential difficulty in identifying mild intratubal inflammation or endometritis (Bevan et al., 1995; CDC, 1998; Morcos et al., 1993).
- Endometrial biopsy and ultrasound scanning may also be helpful when there is diagnostic difficulty but there is insufficient evidence to support their routine use at present.

The differential diagnosis of lower abdominal pain in a young woman includes:

- ectopic pregnancy
- acute appendicitis
- endometriosis
- complications of an ovarian cyst
- functional pain.

Management

It is likely that delaying treatment increases the risk of long-term sequelae such as ectopic pregnancy, infertility, and pelvic pain (CDC, 1998; Netherlands Association for Dermatology and Venereology, 1997). Because of this, and the

lack of definitive diagnostic criteria, a low threshold for empirical treatment of pelvic inflammatory disease is recommended. Broad spectrum antibiotic therapy is required to cover Neisseria gonorrhoeae, Chlamydia trachomatis , and anaerobic infection (Bevan et al., 1995; Templeton, 1996; CDC, 1998).

The choice of an appropriate treatment regimen may be influenced by:

- robust evidence on local antimicrobial sensitivity patterns
- robust evidence on the local epidemiology of specific infections in this setting
- cost
- patient preference and compliance
- severity of disease.

General advice

- Rest is advised for those with severe disease (Evidence level IV, Recommendation grade C).
- If there is a possibility that the patient could be pregnant, a pregnancy test should be performed (IV, C).
- Appropriate analgesia should be provided (IV, C).
- Intravenous therapy is recommended for patients with more severe clinical disease (IV, C).
- Patients should be advised to avoid unprotected intercourse until they, and their partner(s), have completed treatment and follow up (IV, C).
- A detailed explanation of their condition with particular emphasis on the long term implications for the health of themselves and their partner(s) should be provided, reinforced with clear and accurate written information (IV, C).

Admission for parenteral therapy, observation, further investigation, and/or possible surgical intervention should be considered in the following situations (CDC, 1998):

- diagnostic uncertainty
- clinical failure with oral therapy
- severe symptoms or signs
- presence of a tubo-ovarian abscess
- immunodeficiency
- inability to tolerate an oral regimen

Further investigation

All patients should be offered screening for sexually transmitted infections.

Treatment

The following antibiotic regimens are evidence based.

Intravenous therapy should be continued until 24 hours after clinical improvement and then switched to oral.

Recommended regimens

- Intravenous cefoxitin 2 g three times daily (TID) plus intravenous doxycycline 100 mg twice daily (BD) (oral doxycycline may be used if tolerated) followed by oral doxycycline 100 mg twice daily plus oral metronidazole 400 mg twice daily for a total of 14 days (III, B) (CDC, 1998; Hemsell et al., 1994; Martens et al., 1993; Anonymous, 1992; Walker et al., 1993).
- Intravenous clindamycin 900 mg three times daily plus intravenous gentamicin (2 mg/kg loading dose followed by 1.5 mg/kg three times daily [a single daily dose may be substituted]) followed by either oral clindamycin 450 mg four times daily (QID) to complete 14 days or oral doxycycline 100 mg twice daily plus oral metronidazole 400 mg twice daily to complete 14 days (III, B) (CDC, 1998; Hemsell et al., 1994; Anonymous, 1992; Walker et al., 1993).
- Oral ofloxacin 400 mg twice daily plus oral metronidazole 400 mg twice daily for 14 days (III, B) (CDC, 1998; Martens et al., 1993; Walker et al., 1993; Wendel et al., 1991; Witte et al., 1993).
- Intramuscular ceftriaxone 250 mg immediately (stat) or intramuscular cefoxitin 2 g immediately with oral probenecid 1 g followed by oral doxycycline 100 mg twice daily plus metronidazole 400 mg twice daily for 14 days (III, B) (CDC, 1998; Hemsell et al., 1994; Martens et al., 1993; Anonymous, 1992; Walker et al., 1993)

Alternative regimens

- Intravenous ofloxacin 400 mg twice daily plus intravenous metronidazole 500 mg three times daily (III, B) (CDC, 1998; Martens et al., 1993; Walker et al., 1993; Wendel et al., 1991; Witte et al., 1993)
- Intravenous ciprofloxacin 200 mg twice daily plus intravenous (or oral) doxycycline 100 mg twice daily plus intravenous metronidazole 500 mg three times daily (III, B) (CDC, 1998; Walker et al., 1993; Heinonen et al., 1989).

Allergy

There is no evidence of the superiority of any one of the suggested regimens over the others. Therefore patients known to be allergic to one of the suggested regimens should be treated with an alternative.

Pregnancy and breast feeding

- In pregnancy pelvic inflammatory disease is associated with an increase in both maternal and fetal morbidity, therefore parenteral therapy is advised, although none of the suggested evidence based regimens is of proven safety in this situation.
- There are insufficient data from clinical trials to recommend a specific regimen and empirical therapy with agents effective against gonorrhoea, chlamydial, and anaerobic infections should be considered taking into account local antibiotic sensitivity patterns (for example, intravenous cefoxitin 2 g three times daily plus intravenous erythromycin 50 mg/kg continuous infusion, with the possible addition of intravenous metronidazole 500 mg three times daily) (IV, C).

Sexual partners

- Current male partners of women with pelvic inflammatory disease should be contacted and offered health advice and screening for gonorrhoea and chlamydia. Other recent sexual partners may also be offered screening; tracing of contacts within a 6 month period of onset of symptoms is recommended (IV, C) but this time period may be influenced by the sexual history.
- Partners should be advised to avoid intercourse until they and their partner have completed the treatment course.
- Gonorrhoea diagnosed in the male partner should be treated appropriately and concurrently with the index patient (IV, C).
- Concurrent empirical treatment for chlamydia is recommended for all sexual contacts owing to the variable sensitivity of currently available diagnostic tests (IV, C).
- If adequate screening for gonorrhoea and chlamydia in the sexual partner(s) is not possible, empirical therapy for gonorrhoea and chlamydia should be given (IV, C).

Follow-up

Review at 72 hours is recommended (CDC, 1998), particularly for those with a moderate or severe clinical presentation, and should show a substantial improvement in clinical symptoms and signs. Failure to do so suggests the need for further investigation, parenteral therapy, and/or surgical intervention.

Further review 4 weeks after therapy may be useful to ensure:

- adequate clinical response to treatment
- compliance with oral antibiotics
- screening and treatment of sexual contacts

Repeat testing for gonorrhoea after treatment is recommended in those initially found to be infected. Repeat testing for chlamydia may be appropriate in those in whom persisting symptoms, compliance with antibiotics, and/or tracing of sexual contacts indicate the possibility of persisting or recurrent infection.

Definitions

The following rating scheme was used for major management recommendations.

Levels of Evidence

Ia

- Evidence obtained from meta-analysis of randomised controlled trials

Ib

- Evidence obtained from at least one randomised controlled trial

IIa

- Evidence obtained from at least one well designed controlled study without randomisation

II b

- Evidence obtained from at least one other type of well designed quasi-experimental study

III

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Grading of recommendations

A (Evidence levels Ia, Ib)

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B (Evidence levels IIa, IIb, III)

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C (Evidence level IV)

- Requires evidence from expert committee reports or opinions and/or clinical experience of respected authorities.
- Indicates absence of directly applicable studies of good quality.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is graded and identified for select recommendations (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate management of pelvic infection and perihepatitis should show a substantial improvement in clinical symptoms and signs

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The recommendation to cover Neisseria gonorrhoeae in patients presenting with suspected pelvic inflammatory disease in the United Kingdom is based on the following:

- Much of the evidence supporting the use of antibiotics active against N. gonorrhoeae is from the United States. Although anecdotally N. gonorrhoeae is a less common cause of pelvic inflammatory disease in the United Kingdom, the only recent British study found gonococcal infection in 14% of pelvic inflammatory disease patients. The absence of endocervical gonorrhea does not exclude gonococcal pelvic inflammatory disease.
- Most published studies relate to patients presenting with acute pelvic inflammatory disease in a gynecological setting. Pelvic inflammatory disease presenting in other areas, such as primary care and genitourinary medicine clinics, may be less clinically severe, but again there is no published evidence to support the use of less intensive regimens.
- The need for the guidelines to be evidence based. At present there are no large controlled trials from the United Kingdom which support the use of regimens which do not cover N. gonorrhoeae.
- The increasing incidence of gonorrhoea in the United Kingdom

The agents suggested in the guidelines as cover for N. gonorrhoeae are based on the published evidence. Other oral antibiotics, such as ciprofloxacin, have not at present been evaluated as extensively in combination regimens.

Evidence of long-term effectiveness in preventing the complications of pelvic inflammatory disease is currently lacking. Comparatively fewer data exist on oral than that which exist for parenteral regimens.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The Clinical Effectiveness Group reminds the reader that guidelines in themselves are of no use unless they are implemented systematically. The following short-term auditable outcome measures are provided:

- proportion of women receiving treatment with a recommended regimen
- proportion of named male contacts screened for infection and/or treated.

Little is known about the long-term outcome in relation to future fertility, ectopic pregnancy, and chronic pelvic pain, following treatment of pelvic inflammatory disease.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Association for Genitourinary Medicine (AGUM), Medical Society for the Study of Venereal Disease (MSSVD). 2002 national guidelines for the management of pelvic infection and perihepatitis. London: Association for Genitourinary Medicine (AGUM), Medical Society for the Study of Venereal Disease (MSSVD); 2002. Various p. [19 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1999 Aug (revised 2002)

GUIDELINE DEVELOPER(S)

Association for Genitourinary Medicine - Medical Specialty Society
Medical Society for the Study of Venereal Diseases - Disease Specific Society

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Clinical Effectiveness Group (CEG)

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: Jonathan D C Ross

Clinical Effectiveness Group (CEG) Members: Keith Radcliffe (Chairman); Imtyaz Ahmed-Jushuf; Jan Welch; Mark FitzGerald; Janet Wilson

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

No known conflict of interest.

GUIDELINE STATUS

This is the current release of the guideline. This guideline updates a previously released version.

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Available in HTML format from the Association for Genitourinary Medicine (AGUM) Web site. Also available in Portable Document Format (PDF) from the Medical Society for the Study of Venereal Diseases (MSSVD) Web site.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- UK national guidelines on sexually transmitted infections and closely related conditions. Introduction. Sex Transm Infect 1999 Aug;75(Suppl 1):S2-3.

Electronic copies: Available in Portable Document Format (PDF) from the Medical Society for the Study of Venereal Diseases (MSSVD) Web site.

The following is also available:

- Revised UK national guidelines on sexually transmitted infections and closely related conditions 2002. Sex Transm Infect 2002;78:81-2

Print copies: For further information, please contact the journal publisher, BMJ Publishing Group.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on December 8, 2000. The information was verified by the guideline developer on January 12, 2001. This summary was updated on August 5, 2002.

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Date Modified: 4/12/2004